

Claims

1. A method for culturing cells, which comprises the steps of: causing cells to adhere to the surface of a cell array substrate having a cell adhesiveness variation pattern that comprises regions having good cell adhesiveness and regions having inhibited cell adhesiveness patterned on a substrate; transferring the adhered cells to a cell culture substrate in such patterned state; and culturing the transferred cells.
5. The method according to claim 1, wherein the regions having good cell adhesiveness in the cell adhesiveness variation pattern have water contact angles between 10° and 40°.
10. 3. The method according to claim 1 or 2, wherein the cell adhesiveness variation pattern is formed of a cell adhesiveness variation layer that comprises a cell adhesiveness variation material whose cell adhesiveness is varied by the action of a photocatalyst along with energy irradiation.
15. 4. The method according to claim 3, wherein the cell adhesiveness variation layer is a photocatalyst-comprising cell adhesiveness variation layer that comprises a photocatalyst and the cell adhesiveness variation material.
20. 5. The method according to claim 3, wherein the cell adhesiveness variation layer comprises a photocatalyst-comprising photocatalyst treatment layer and a cell adhesiveness variation material layer that comprises the cell adhesiveness variation material formed on the photocatalyst treatment layer.
6. The method according to claim 3, wherein the cell adhesiveness variation pattern is formed by arranging the cell adhesiveness variation layer that comprises the cell adhesiveness variation material and the photocatalyst-comprising layer so that the layers face each other, and then carrying out energy irradiation.
25. 7. The method according to any one of claims 1 to 6, wherein the cell culture substrate is made of a biomaterial.
8. The method according to any one of claims 1 to 7, wherein the cell adhesiveness

variation pattern is a pattern wherein linear regions having good cell adhesiveness are arranged on regions having inhibited cell adhesiveness.

9. The method according to any one of claims 1 to 8, wherein the cell adhesiveness variation pattern is a pattern wherein linear regions having good cell adhesiveness and

5 spaces comprised of the regions having inhibited cell adhesiveness are arranged alternately, the line widths of the regions having good cell adhesiveness are each between 20 μm and 200 μm , the space widths between such lines are each between 300 μm and 1000 μm , and the cells used are vascular endothelial cells.

10. A cell tissue, which is formed by the method according to any one of claims 1 to 9.

11. A cell adhesion substrate comprising a cell array substrate having the cell adhesiveness variation pattern that comprises regions having good cell adhesiveness and regions having inhibited cell adhesiveness patterned on a substrate wherein cells adhered to the regions having good cell adhesiveness in a cell adhesiveness variation pattern in the cell array substrate.

15 12. The cell adhesion substrate according to claim 11, wherein the regions having good cell adhesiveness in the cell adhesiveness variation pattern have water contact angles between 10° and 40°.

13. The cell adhesion substrate according to claim 11 or 12, wherein the cell adhesiveness variation pattern is formed of a cell adhesiveness variation layer that
20 comprises a cell adhesiveness variation material whose cell adhesiveness is varied by the action of a photocatalyst along with energy irradiation.

14. The cell adhesion substrate according to claim 13, wherein the cell adhesiveness variation layer is a photocatalyst-comprising cell adhesiveness variation layer that comprises a photocatalyst and the cell adhesiveness variation material.

25 15. The cell adhesion substrate according to claim 13, wherein the cell adhesiveness variation layer comprises a photocatalyst-comprising photocatalyst treatment layer and a cell adhesiveness variation material layer formed on the photocatalyst treatment layer

that comprises the cell adhesiveness variation material.

16. The cell adhesion substrate according to claim 13, wherein the cell adhesiveness variation pattern is formed by arranging the cell adhesiveness variation layer that comprises the cell adhesiveness variation material and the photocatalyst-comprising
5 layer so that the layers face each other, and then carrying out energy irradiation.

17. A method for regenerating a tissue of a subject, which comprises transferring cells derived from a subject and caused to adhere to the above cell adhesion substrate according to any one of claims 11 to 16 onto a biological tissue of the subject in a patterned state and then growing the cells.